R-E-M-A-R-K-S

The Applicants respectfully thank the Examiner for his careful examination.

The Examiner has rejected Claims 1 and 12 under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. More specifically, the Examiner states that the wording of the claims does not provide for a tangible or useful outcome or the method of claim 1 or the computer program of claim 12. There is no output from either claim that produces a useable number.

Accordingly, the Applicants have amended the claims.

More precisely, the Applicants have added "*outputting said diagnostic value*" at line 8 of claim 1. The Applicants believe that this amendment is fully supported by the disclosure. In fact, it is disclosed at Lines 27-30 of Page 3 that "means for calculating the difference between the best fit analytical function and the power spectrum, in order to **output a diagnostic value**" (emphasis added).

The Applicants have similarly amended claim 12. In fact, the Applicants have added "outputting said diagnostic value" at line 9 of claim 12. As mentioned previously, the Applicants believe that this amendment is fully supported by the disclosure.

The Applicants have further amended the preamble of Claim 12 to read "*A computer readable memory comprising a plurality of instructions which when executed perform the steps of*". The Applicants believe that this amendment is in accordance with the Current US Practice of having the computer program embodied on a computer readable medium.

Moreover, the Applicants have amended "*A computer program product as defined*" to read "*The computer readable memory as claimed*" at line 1 of Claims 13-17.

The Applicants now believe that this objection is now fully overcome.

The Examiner has rejected Claims 1, 2, 8, 9, 12 and 13 under 35 U.S.C. 112(e) as being anticipated by US Patent Application 2002/0077711 (Nixon et *al.*).

Nixon et *al.* disclose a fusion of process performance monitoring with process equipment monitoring and control.

The Examiner has stated that the step of "*measuring an error in a control loop over time to determine a spectral density of said error*" is disclosed at Paragraph 57 of Nixon et *al.*

The Applicants do not understand where such step is disclosed.

Paragraph 57 discloses: "*Referring now to FIG. 3, a more detailed data flow diagram 200 illustrating data flow within the process control plant 10 is provided. Beginning at the left side of the diagram 200, data associated with the process plant 10 is collected by or at different functional areas or data sources within the plant 10. In particular, process control data 201 is collected by, for example, typical process control devices such as field devices, input/output devices, handheld or remote transmitters, or any other devices which may be, for example, communicatively connected to process controllers. Likewise equipment monitoring data 202 associated with traditional equipment monitoring activities is collected by, for example, sensors, devices, transmitters, or any other devices within the plant 10. Process performance data 203 may be collected by the same or other devices within the plant 10. If desired, financial data may be collected by other applications run in computers in the process control plant as part of the performance monitoring data. In some instances, the collected data may be from applications or sources outside of the traditional process control network, such as applications owned and operated by service organizations or venders. Of course the data collected may be any of, but is not limited to rotating equipment angular position, velocity, acceleration data (as well as transforms of this data to provide power spectral density, frequency amplitude, etc.), equipment stress data, strain data, wall thickness data, corrosion extent and rate of corrosion progress data, corrosivity of process fluids data, lubrication and wear data, bearing and seal*

data, leakage presence rate and composition of escaping liquids and gasses data including but not limited to data about volatile organic and inorganic compounds, bearing temperature data, acoustic transducer data, process physical and compositional measurement data, etc. This data may be collected in any manner including automatically or manually. Thus, data collectors may include hand held collection devices, laboratory chemical and physical measurements, fixed or temporary on-line devices, devices which periodically (e.g., RF) telemeter data from remote process and equipment measurement devices, on-line device inputs or remote multiplexers and/or concentrators or any other data collection devices".

The Applicants do not see where the step mentioned is disclosed and therefore requires a clarification from the Examiner.

The Examiner further states that the step "*determining a best fit analytical function describing said power spectral density of said error*" is disclosed at Paragraph 58 of Nixon et *al.*

Again, the Applicants do not understand where exactly such step is disclosed.

Paragraph 58 discloses: "*The process control data, equipment monitoring data and process performance data may be reconciled, verified, validated and/or formatted by data collection and reconciliation applications 204 (which may be part of the data collection and distribution system 102 of FIG. 2) run within the data collection device or within any other device such as at a central data historian, process controllers, equipment monitoring applications, etc. or any other device which receives or processes this data. Of course, the collected data may be reconciled or massaged in any known or desired manner. For example, the data may be put into a common format or scale, may be converted to different or standard.(common) units, may be scanned for outliers, erroneous or incorrect data, may be verified or validated in any known or desired manner, etc. There are many known methods or techniques of performing data reconciliation and method of reconciling, messaging, verifying or collecting data may be used.*

Still further, the different types of data may be collected by a common collector or data collector routines even though this data may be in different formats, protocols, etc."

Finally, the Examiner further states that the step "*and measuring a diagnostic value from a difference between said best fit analytical function and said power spectral density of said error*" is disclosed at beginning of Paragraph 61 of Nixon et *al.*

Again, the Applicants do not understand where such step is disclosed.

Paragraph 61 discloses "*Still further, an equipment monitoring functional block 220 receives the equipment condition data 202 or the reconciled version of such data if reconciliation is performed on that data. The equipment monitoring functional block 220 includes equipment or condition monitoring applications 222 which may, for example, accept or generate alarms indicating problems with various pieces of equipment, detect poorly performing or faulty equipment within the plant 10 or detect other equipment problems or conditions which may be of interest to a maintenance person. Equipment monitoring applications are well known and typically include utilities adapted to the different specific types of equipment within a plant. As such, a detailed discussion of these applications is not necessary. Likewise, equipment diagnostic applications 224 may be implemented to detect and diagnose equipment problems based on raw data measured pertaining to the equipment. Such equipment diagnostic applications 224 may include, for example, vibration sensor applications, rotating equipment applications, power measurement applications, etc. Of course, there are many different types of known equipment condition monitoring and diagnostic applications which can produce many kinds of different types of data associated with the state or operating condition of different pieces of equipment within a process control plant. Still further, a historian 226 may store raw data detected by equipment monitoring devices, may store data generated by the equipment condition monitoring and diagnostic applications 222 and 224 and may provide data to those applications as needed. Likewise, equipment models 228 (which*

may be part of the models 56 of FIG. 1 and thus part of the performance monitoring functional area) may be provided and used by the equipment condition monitoring and diagnostic applications 222 and 224 in any desired manner. The creation and use of such models is well known in the art and need not be described further herein."

At this point the Applicants courteously submit that this rejection is believed to be defective as the argumentation provided does not find any support in the reference cited.

The Applicants now believe that this objection is now fully overcome.

The Examiner has rejected Claims 3-5, 14 and 15 under U.S.C. 103(a) as being obvious in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan).

The Applicants point out that the Examiner has not rejected independent Claims 1 and 12 under U.S.C. 103(a) as being obvious in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan). Accordingly, the Applicants submit that independent Claims 1 and 12 are not obvious in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan). If such claims are not obvious in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan), *a fortiori* dependent claims from such independent claims are not obvious in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan).

Accordingly Claims 3-5, 14 and 15 cannot be rejected under U.S.C. 103(a) in view of US Patent Application 2002/0077711 (Nixon et *al.*) and further in view of US Patent N°5,784,273 (Madhavan).

The Applicants now believe that this objection is now fully overcome.

The Applicants have voluntarily amended Claim 1.

More precisely, the Applicants have removed "*the steps of*" at Lines 1-2 of Claim 1.

In view of the foregoing, reconsideration of the rejection of Claims 1-17 is respectfully requested. It is believed that Claims 1-17 are allowable over the prior art and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

ETTALEB *et al.*

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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

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July 22, 2005
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